STATE OF ARIZONA 9-1-1 PROGRAM
Arizona Department of Administration
Information Services Division

Arizona 9-1-1

May 2006

9-1-1 Budget Standards & Procedures

Don't you just hate that time of year when 9-1-1 budgets are due!!! It means recording expenses which you don't completely understand, and developing costs and justifying needs for projects far down the road. Well, your life is about to get a little easier. Arizona's 9-1-1 Office has standardized the budget documents that you will use to record costs, along with the process to be followed. And most importantly, 9-1-1 Office personnel will have a support role in the development of your budget. These changes will take effect with the development of your fiscal year 2008 9-1-1 budget.

Each 9-1-1 System Administrator will have an assigned 9-1-1 Office Project Manager to work with (either Maria Hall or Penelope Meyers). The Project Managers will assume much of the responsibility for budgeting your monthly ongoing costs, leaving you free to concentrate on costs and justification associated with future enhancements such as additional positions, equipment replacement, deployment of Phase I or II, etc.

At the statewide 9-1-1 System Coordinator's forum scheduled for August 16th, you will be provided an overview of the new process. In addition, over the next few months Maria and Penelope will schedule a one-on-one with each of the 9-1-1 System Administrators to review the process in depth and discuss particulars related to each system.

Arizona's 9-1-1 Office publishes this "Arizona 9-1-1 News & Views" twice a year. It is our intent to keep you abreast of events around the state as well as around the nation; and to keep you informed regarding both technological and political issues that impact 9-1-1. We sincerely hope that this communiqué serves you. We welcome your comments and suggestions.

VoIP Terminology

Just when you thought you had heard it all…here are some terms used in the VoIP world of Enhanced 9-1-1. You may encounter these phrases during the testing process.

VPC – VoIP Positioning Center - The element that provides routing information to support the routing of VoIP emergency calls, and cooperates in delivering location information to the PSAP over the existing ALI database (DB) infrastructure. The VPC temporarily allocates an ESQK to a particular call instance and stores information associated with that call with the ESQK pending a subsequent query from an ALI DB. Companies acting in this capacity in our state are Intrado, TCS and HBF.

ESQK – Emergency Services Query Key - Identifies a call instance at a VPC, and is associated with a particular selective router (SR)/ESN combination. It is delivered to the E9-1-1 SR and as the calling number/ANI for the call to the PSAP. It is used by the SR as the key to the Selective Routing data associated with the call and is delivered by the SR to the PSAP as the calling number/ANI for the call. It is subsequently used by the PSAP to request ALI information for the call. The ALI database includes the ESQK in location requests sent to the VPC. The ESQK is used by the VPC as a key to look up the location object and other call information associated with an emergency call instance.

ESZ – Emergency Service Zone - A particular "geographical area" having a unique combination of emergency service agencies. This ESZ will then correlate to an Emergency Service Number (ESN).

ESGW – Emergency Services Gateway - The signaling and media interworking point between the IP domain and conventional trunks to the E9-1-1 SR. The ESGW uses the routing information provided in the received call setup signaling to select the appropriate trunk (group) and proceeds to signal call setup toward the SR using the ESQK to represent the Calling Party Number/Automatic Number Identification (ANI) information.   The ESGW takes VoIP delivered calls and converts them to Time Division Multiplexing (TDM) signaling for delivery into the E9-1-1 Selective Routing Network. The ESGW will implement dedicated 9-1-1 trunks to the SR. Known companies to have this relationship with VPC's and VSP's in our State include Level 3, Intrado, MCI and Broadwing.

VSP – VoIP Service Provider - Company that offers voice products and services for use on the Internet and IP networks.

ECRC – Emergency Call Relay Center – Third party dispatch center used by VPC's if a VoIP 9-1-1 call is not able to be routed using the native 9-1-1 network. They will transfer a call to a PSAP and provide any details known at that time. This is also known as a "warm transfer". Some VSP's also refer to this function as their "safety net".

Sedona & Cottonwood Phase II Assisted Rescue

The following is an excerpt from an article that appeared in the Verde Independent on April 16, 2006.

It was a page out of an intrigue movie in which a caller is pinpointed on a computer screen to a point on a satellite map.

It happened just south of Cottonwood on Allen Springs Road.

A 911 call was routed to the Sedona Regional Communications Center (SRCC) where Dispatcher Julianna Stewart answered the call shortly after 4 a.m. April 8. "Where is your emergency?"

"I am in the middle of nowhere" caller Jeff Arlofski replied.

The Oregon man claimed that he had been abducted from his motel room by two men he just met in Cottonwood that morning. He says he was beaten and left in the remote location. Concerned he could have broken ribs and other injuries and unaware of his location, Arlofski used his cell phone to call 911.

"Fortunately for Arlofski, the regional center is upgrading its system to locate a cell phone caller with Phase II service", says Gary Johnson, spokesman for the Sedona Fire District. "Within minutes, Arlofski's position was located off of Forest Road 413, south of Cottonwood".

Stewart stayed on the phone with the 32-year-old man during his rescue, keeping his spirits up and assuring him help was on the way. Within 90 minutes he was on board a Department of Public Safety Ranger helicopter en route to Verde Valley Medical Center.

Cottonwood Police have made a subsequent arrest and issued a warrant for a second man.

Graham County Gets New Comm. Center

Teresa Bigler, Graham County 9-1-1 Administrator, was asked to comment on her county's new communication center.

"On March 15, 2006 the Graham County Communications Department moved into a new Communications Center, under the direction of Sgt. Scott Howell."

"The building was designed and constructed using Graham County funds and labor. It was designed specifically for Communications and has proven to be very functional, efficient and comfortable."

"Homeland Security provided work stations and the communications equipment needed to operate the center. The State of Arizona 911 Office and Qwest supported the center with Plant 911 equipment. The radio equipment was purchased through Motorola. All this has proven to be a good combination, and has provided the Communication Officers a nice place to work."

Arizona's Phase II Deployments
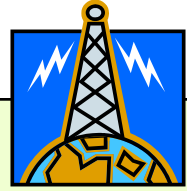
The deployment of Phase II Wireless service is moving along nicely in Arizona. The northern area of Yavapai County (Camp Verde, Cottonwood, Sedona and surrounding county area) is now receiving the benefit of latitude and longitude coordinates when 9-1-1 calls are placed from cellular phones. Five carriers were tested and turned-up by the end of April, with the sixth and final carrier scheduled to deploy mid-June.

Within two weeks from the time the first carrier deployed Phase II in Yavapai County, the emergency response community was able to quickly locate and rescue an Oregan man thanks to their newly acquired location technology (the rescue is detailed in an article, page 3 of this newsletter).

Over the past six months, GIS personnel in Pinal, Santa Cruz and Graham Counties, along with outside GIS consultants, have been hard at work developing maps and GIS files to support Phase II service. Their tasks are nearing completion and will result in the deployment of Phase II service. It is anticipated that all three counties will be receiving Phase II service by mid 2007. With those deployments complete, and along with Pima, Maricopa and Yavapai Counties, approximately 70% of Arizona's population will be served by Phase II Wireless service.

Arizona Statewide 9-1-1 System Coordinator's Forum

By: Barbara Jaeger

After attending a statewide 9-1-1 System Coordinator's meeting in Florida last spring, I saw that this type of forum would prove to be beneficial in Arizona. Therefore, the date has been set for Wednesday, August 16, 2006 from 9:30 a.m. to 3:30 p.m. A location has not been formalized, but we will be sending out notification letters with that information shortly.

Items to be discussed will be the future of 9-1-1 in Arizona, funding issues and technological advancements. Updates will be provided by the state's 9-1-1 staff on pending and on-going projects. Administrative Code changes will be on the agenda, as well as, budgeting workshops, training opportunities and accounting procedures.

All **9-1-1 System Coordinators will have an opportunity to discuss issues that are facing their areas** and be able to look to their counterparts for help or suggestions.

This will be a wonderful opportunity to network with your peers and we encourage your participation. The 9-1-1 Office is open to suggestions for additional program content. If there are other agenda items you would like to see included, please email me at Barbara.jaeger@azdoa.gov.

Wednesday, August 16, 2006
9:30—3:30
Arizona State Capital
Specific Location Information will be Forthcoming

VoIP in Our State

Voice over Internet Protocol (VoIP) is continuing to grow at a dramatic rate in Arizona, as well as, the nation. The FCC ruled that VoIP providers which utilize the traditional telephone network to complete calls must provide enhanced 9-1-1 services in areas where enhanced 9-1-1 is available for wire line customers. The original deadline for completion of this project was 11/28/05; however, this proved to be an unreachable goal for most VoIP providers.

Arizona PSAPs have been actively involved in test and turn-up of enhanced VoIP 9-1-1 capabilities. To initially prepare for the activity, the System Administrators were asked to prepare a "Data Form" for each of the primary PSAPs for which they have responsibility. This data form contained most of the information being requested by the VoIP entities and was provided to them once they contacted a given jurisdiction.

The testing process began in December 2005 and continues today. Delays are being encountered as a result of unique PSAP as well as VoIP entity issues. All groups are working closely to resolve roadblocks as quickly as possible.

Here is the current status for the 67 primary/enhanced PSAPs in our state.

27 have successfully tested per our requested state process. They are receiving enhanced VoIP 9-1-1 calls today.

22 PSAPs are working through software/programming issues and should be cleared by 6/2006. Of these 22 PSAPs, 18 are receiving enhanced VoIP 9-1-1 calls today. However, the resolution of these issues is necessary to provide the "VoIP" class of service, as well as, place the ANI information in the appropriate field.

4 PSAPs failed tests primarily due to routing issues. They are being reviewed and corrected.

2 PSAPs remaining to be scheduled for testing.

12 PSAPs are not in Qwest territory. The VoIP entities are working with both Frontier (Citizens) Communications as well as Verizon Telecom of California on acceptable solutions.

If you have any questions or anomalies to report please contact Maria Hall at 602-771-4911 or e-mail her at maria.hall@azdoa.gov.

Arizona GIS Project Update

Last year, the **State 9-1-1 Office was awarded a one million dollar grant to be used towards statewide deployment of enhanced wireless 9-1-1**. To be eligible for Phase II wireless funding, 9-1-1 systems must possess and maintain highly accurate GIS map data. Thus, the State 9-1-1 Office opted to use the grant to support GIS development and enhancement in areas that lacked the necessary GIS map data to turn up Phase II. The counties of Graham, Pinal, and Santa Cruz were selected as the best candidates for the initial GIS projects. All three counties have deployed wireless Phase I, yet lack the required GIS map data to display Phase II wireless calls.

The aforementioned GIS projects will produce highly accurate street centerline GIS maps, as well as, digital Emergency Service Zones (ESZs) and community boundaries for each county. The streets will be a visual representation of the Master Street Address Guide (MSAG) and will have the capability of automatically locating >95% landline callers. Furthermore, when a dispatcher answers a Phase II wireless call, the map will automatically plot the location of the caller.

The projects kicked off last November (2005) and are expected to complete by August 2006. Status of each project is detailed below.
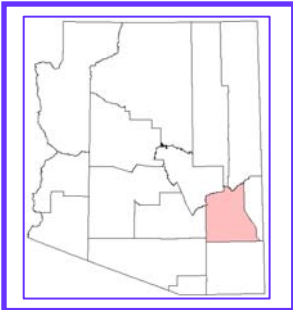
Graham County
Project kickoff date: November 7, 2005
Estimated completion date: August 2006
Current ALI* to GIS match rate: 98%
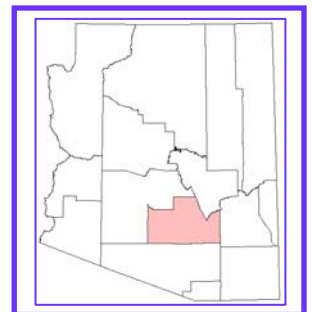
Pinal County
Project kickoff date: November 7, 2005
Estimated completion date: August 2006
Current ALI to GIS match rate: 85%

Santa Cruz County
Project kickoff date: November 7, 2005
Estimated completion date: August 2006
Current ALI to GIS match rate: 95%

* ALI stands for Automatic Location Information. They are the landline customer addresses that appear during a 9-1-1 call. The State 9-1-1 GIS Standard is a >95% match of the ALI to GIS.

Please contact Adam Iten, State 9-1-1 GIS Coordinator, adam.iten@azdoa.gov with any questions/comments regarding this article or GIS

FCC Reorganizes 9-1-1 Efforts

Federal Communications Commission Reorganizes 9-1-1 Efforts
Public Safety and Homeland Security Bureau Established

In an effort to strengthen its public safety and homeland security functions the commission voted to establish a "Public Safety and Homeland Security Bureau". The new bureau is designed to provide a more efficient, effect, and responsive organization structure to address a variety of functions including 9-1-1.

The Public Safety and Homeland Security Bureau will handle, among others, the following issues and functions that have been dispersed among seven different bureaus and offices:

- Public safety communications: 911/Enhanced 911 requirements, Public Safety Answering Points (PSAPs), Interoperability and operability of public safety communications and Communications Assistance for Law Enforcement Act (CALEA)
- Priority emergency communications (TSP/WSP programs)
- Alerting and warning of U.S. citizens (EAS, etc.)
- Continuity of government operations (COG) and Continuity of Operations (COOP) planning.
- Public safety outreach (e.g.; PSAPs, first responder organizations)
- Disaster management coordination and disaster management outreach
- 24/7 communications center
- Communications infrastructure protection
- Network reliability, resiliency and security
- Advisory committees and panels focused on public safety and security issues.
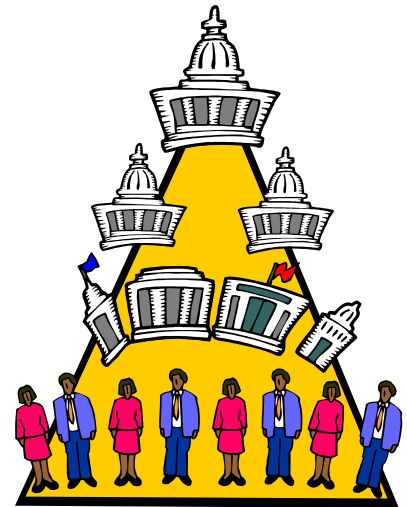
The new bureau will be organized into three divisions consisting of the Policy Division, Public Communications Outreach & Operations Division and the Communications Analysis Division.

This move should facilitate the 9-1-1 community in dealing with difficult issues which required the involvement of one or more of the FCC offices in the past.

Travels Around Arizona

By: Barbara Jaeger

There are lots of activities going on around the state and Arizona's 9-1-1 Office continues to work with communities to support these activities.

One monumental completion is the enhanced wire line 9-1-1 project for southern Yavapai County. This project has taken close to 12 years to complete, but it is finally done. The project entailed addressing all the areas outside of the City of Prescott. Started in 1994, the project was done in three phases. The first was Prescott Valley, followed by the Highway 69 corridor, finishing with Chino Valley, Black Canyon City and the remaining unincorporated areas. Congratulations to those who were instrumental in the completion of this project.

Another long term project which is close to completion is the unincorporated areas of Cochise County, along with the Town of Bisbee and Tombstone. The database prep is in the final stages, awaiting the simulation to meet the 95% accuracy threshold. With the completion of this process, the Town of Bisbee will have new enhanced 9-1-1 equipment installed.

The Gila River Indian Tribe project is awaiting contractual signatures between the tribe and Qwest Communications. Once executed and database requirements met, new enhanced 9-1-1 equipment will be ordered for the PSAP. **This is a very exciting project, in that, it is the first of its kind in Arizona. Possibly the first of it's kind in the United States**.

The Gila County wire line enhanced 9-1-1 project is still moving along. The next phase of the project will include the database simulation for the northern Gila County section <u>outside the Town of Payson</u>. Address cleanup and GIS/addressing work is underway in southern Gila County. Discussions have once again begun to bring the San Carlos Tribe into the Gila County 9-1-1 system.

Arizona's 9-1-1 Office participated in the ribbon cutting ceremonies for the new county PSAP in Graham County. Representatives from the County Board of Supervisors, the Governor's Office and the State Office of Homeland Security were on hand for the dedication of the new 9-1-1 center. Funds for 9-1-1 equipment were approved from Arizona's 9-1-1 program; funds for the radio, telephone and furniture were provided by a Homeland Security grant.

Two projects that are very intricate and have required a large amount of resources will ultimately provide enhanced wire line 9-1-1 to the far NW corner of the state, along with inter-tandem transport of calls from Qwest to Frontier. The first project involves a collaborative effort between Qwest Communications, Frontier Communications and Rio Virgin; it will bring enhanced 9-1-1 to the community of Beaver Dam and Littlefield which are served out of a central office in Nevada. The second project will allow Colorado City's PSAP (served by Qwest Communications and South Central Communications) to transfer 9-1-1 calls, along with address information, to the Mohave County Sheriff's PSAP.

The first Coconino PSAP Manager's meeting was held in Flagstaff. Participants included representatives from Coconino County GIS, DPS-Flagstaff, Flagstaff PD, Grand Canyon National Parks Service, Page PD, Sedona Fire District, and Winslow FD. Thanks to Jana White, Flagstaff/Coconino 9-1-1 Administrator, for organizing this event and committing to continue them in the future.

The Town of Florence has qualified to be a primary PSAP and will be installing Positron Power 9-1-1 equipment in the next few months. With that completed, calls from within the town limits will be selectively routed to Florence Police Department.

Staff from Arizona's 9-1-1 Office attended the ribbon cutting ceremonies for new communications equipment for Nogales PD and Santa Cruz County Sheriff's Office. Funds for this project were provided under Arizona Department of Homeland Security.

Cochise County's Addressing Efforts

Jerry Eberwein, Addressing Manager Cochise County, provides an update on his county's addressing efforts.

"Cochise County Addressing began in 1986 when the Sierra Vista Main and South telephone exchanges were selected for installation of the Enhanced 9-1-1 system. Although the 9-1-1 installations took a long break, the addressing program continued to march onward as fast as two or three people could travel. And, travel they did. Ms. Sally Snowball, the current Addressing Specialist and Rural Addressing Leader, has driven almost all the named roads in the county. Every road (including those in the cities) has had the center line subjected to the county GPS unit and that information has been plotted into the county mapping database."

"The addressing has its challenges. In addition to the usual buildings, addresses have been issued for the unusual – railroad call boxes, traffic counters, gas meters, signal lights, Amber alert message boards, the truck weighing and permit systems on I-10 in San Simon, and FAA navigation sites; to name a few. If it has a power meter or a telephone, addressing it became the rule."

"Willcox joined the E9-1-1 group eleven years later. In two more years the biggest number of phone lines in one chunk joined, when the Benson, Douglas, Huachuca City and Palominas exchanges brought the enhanced telephone subscribers to over 75%. The upgrade of the Qwest Bisbee and Tombstone Exchanges; the Midvale Telephone and Valley Telecom Group facilities is nearing completion. When completed, all the county wire line customers will have E9-1-1."

"The addressing effort has produced a long range program to position the county to be ready for the deployment of Wireless Location. 100% of the streets and roads have been included in the MSAG and all the communications towers in the unincorporated area have unique addresses. When Wireless Phase II is deployed, we will be ready to answer."
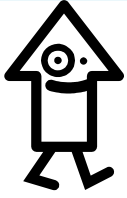
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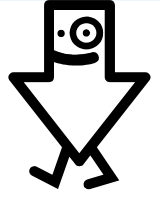
When it comes to the Arizona 9-1-1 network, there can never be too much redundancy. Fourth quarter of 2005 we shared project information with you that was in the planning and design stage which would allow for additional redundancy among the four Qwest Selective Routers serving both the Phoenix and Tucson LATAs (Local Access and Transport Area). We referred to this as the "Mesh Tandem" project and are pleased to announce we are now ready to move forward.

Our "Dual Tandem" project in 2005 created a network within the LATAs which allowed for the two respective tandems to "mirror" each other for call handling purposes. Only one Selective Router in each LATA (Phoenix Southeast and Tucson East) is considered the primary router. As long as they remain functional, intertandem transfer can be accomplished between LATAs. If one of them fails, that capability would not exist.

Mesh Tandem will link the two secondary Selective Routers (Phoenix Main and Tucson South) in each LATA with the primary Selective Router in the opposite LATA thus creating a redundant path in the network should a primary Selective Router be disabled. The intertandem transfer capability between LATAs would still exist giving true "total" redundancy to the 9-1-1 network. Facilities will also be added which provide access to this capability to Maricopa Region 911's CML Selective Routers.

Unlike the Dual Tandem project which required changes to your PSAP trunking, the Mesh Tandem project will involve design changes and/or additions at the Selective Router level only. The project is scheduled to begin the end of May 2006 and complete the end of June 2006.

If you have any questions please contact Maria Hall at 602-771-4911 (maria.hall@azdoa.gov)

Reduction of Arizona's 9-1-1 Excise Tax

As 9-1-1 Office personnel have been reporting over the past few years, legislation is in place to reduce the 9-1-1 excise tax from $.37 per month to $.28 per month. This change will become effective July 1, 2006.

Resources

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APCO

Association of Public-Safety
Communication Officials
website: www.apco911.org

NENA

National Emergency Number
Association
website: www.nena.org